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ABSTRACT

This study investigated how and to what extent classroom teachers collaborated with museums in order to enrich their curriculum and student understanding. Researchers reviewed the literature, interviewed seven museum educators regarding their collaborations with Virginia schools, and interviewed four classroom teachers who had worked with two museum educators in an effort to stimulate student skill development and encourage student motivation. Five major topics regarding museum/school collaborations provided a framework for the study results: people who collaborate and their roles; reasons for collaborations; types of collaborations; collaborations and the school curriculum; and collaborations and student understanding. Museum educators and classroom teachers were the primary collaborators. There were five main reasons for collaborating, which reflected the contributions of museums and museum educators and the positive outcomes of working with teachers. Six types of museum/school collaborations were noted. All museum programs fit their activities into pertinent curricular objectives. Collaborations increased students' motivation and achievement while developing critical thinking skills and self-esteem. Four appendixes contain: interview questions for museum educators; interview questions for teachers; a tip sheet on such collaborations; and museum and teacher resources. (Contains 18 references.) (SM)

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Collaborations between Museum Educators and Classroom Teachers: Partnerships, Curricula, and Student Understanding

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Introduction

A new day dawns. As the sun creeps over the horizon, sleepy-eyed children slip out of bed to prepare for school. Early in the morning, millions of schoolchildren across the nation run, ride, bicycle or stride to their place of work. At school, each student will participate in a structured schedule of lessons and activities, from reading and writing to science, math, and social studies, which the teacher plans to help the whole child grow. But, where else besides schools are children learning today? Let's take a look inside several different museums.

At the Virginia Discovery Museum on the Downtown Mall in Charlottesville, children enter a new culture as they step through the doors to a special exhibit about traditional and modern Japan. A pathway formed by bamboo fencing ushers children under a Shinto gate and into a multi-sensory world in which they can choose to interact with many different objects. A mini-sushi bar complete with realistic-looking rubber rolls of seafood, rice and seaweed entices children to try "eating" this exotic fare with chopsticks. In front of a full-size replica of a room in a Japanese home, children remove their shoes and then step in, looking up at the rice paper walls and walking gingerly on the tatami mats (peek inside a drawer in the house; children may have stashed sushi in those drawers like squirrels burying nuts). Children also listen to recordings of common Japanese words and phrases, try on a yukata (a summer cotton kimono), and make haiku on the wall with magnetic words, among may other activities. The staff at the museum hope that the hands-on experiences that the exhibit provides will spark a sense of wonder in children and make them excited about learning.

Down the road at Monticello, the historic home of Thomas Jefferson, students examine the contents of Jefferson's "pockets" in the Learning Center (ivory note pad, lead pencil, pocket knife, key, sunglasses, book written in French, quill toothpick, tinderbox, and money), discussing whether the objects resemble a familiar modern-day item or whether the objects are unfamiliar. Then, the students try to determine the meaning or value of each object in relation to its owner. Across town at the Bayly Art Museum on the University of Virginia's campus, the education director leads children sitting on the floor in front of several paintings through a series of "gallery games." Over the mountains in Staunton, Virginia, children get to tour a real barnyard at the Museum of American Frontier Culture, an atmosphere which stimulates all of their senses. If we get on the road and travel north on I-81 and east on 66, we might arrive at the Smithsonian's National Museum of Natural History in Washington D.C. in time to see schoolchildren interviewing museum staff about their roles and responsibilities. Other small groups of children work on specific observational assignments inside of an exhibit such as examining the lighting, labels, audio-visual equipment, or colors of the display.

Through our research involving a literature review, travel to museum sites to interview museum educators, and discussions with classroom teachers who incorporate museums into their instruction, we have found that classroom teachers and museum educators collaborate in at least six different ways in order to merge the resources of two institutions, or worlds. The world of classroom education contains teachers, students, a curriculum, and multitudes of lessons and activities from multiple disciplines. The world of museum education contains educators who are very knowledgeable about the museum's collections and who provide interdisciplinary lessons on a specific topic. These two worlds approach instruction differently in that "'words are the principal

tools of a school, whereas, objects are the principal educational tools of a museum'" (Caston, 1989, p. 97).

Howard Gardner, in The Unschooled Mind: How Children Think and How Schools Should Teach (1991), discusses how museums provide engaging methods and materials for student learning and understanding during all stages of childhood (and beyond). He sees student learning in a museum environment as an apprenticeship of children to adult masters. When developing a new skill, procedure or concept in such an apprenticeship, students "observe competent adults," "experience first-hand the consequences" of their choices, transition from emulating adult models to "trying out their own approaches," and also "discuss alternatives with more accomplished peers" (p. 203). This approach to learning provides reasons for acquiring the new skills and knowledge and guides students towards using their new learning in an appropriate way. Gardner does not suggest that educators "convert each school into a museum, nor each teacher into a master, but rather to think of the ways in which the strengths of a museum atmosphere, of apprenticeship learning, and of engaging projects can pervade all educational environments from home to school to workplace" (p. 203).

With Gardner's convictions in mind, classroom teachers who seek the rich resources of the museum, the expert knowledge of its staff, and meaningful methods of guiding student development, inject the strengths of a museum environment into their curriculum. In return, museum educators who relate their programs to the school curriculum, make themselves available to work with teachers on specific needs, and offer training opportunities such as workshops, enable teachers to become knowledgeable about and confident in using the museum environment. When these two institutions join together to educate children, they form a

symbiotic relationship which positively impacts student learning and understanding.

Purpose

The study was designed to investigate how and to what extent classroom teachers work in partnerships with museums in order to enrich their curriculum and student understanding.

In the current study, we interviewed seven museum educators regarding their collaborations with schools in both the Central Virginia and Northern Virginia areas. We also interviewed four classroom teachers who have worked with two of the museum educators in an effort to stimulate student skill development and to encourage student motivation.

Literature Review

The articles we read to familiarize ourselves with concepts of museum-school collaborations and to prepare for our interviews with museum educators and classroom teachers offer interesting definitions of both museums and objects. Defining "collaboration" entails more of a challenge because it varies so much between situations. In organizing this discussion of the literature, we found that three general questions fall under the heading of "**Partnerships**": who collaborates, why collaborate, and what types of collaborations might teachers enter into? The literature also provides interesting information about how school-museum collaborations enrich the school **curriculum** and enhance **student understanding** and motivation.

Definitions

Many people visit museums as children and keep coming back to museums throughout their lives because of the fascinating discoveries they make during each visit: "The word 'museum' derives from the ancient word 'muse,' a Greek mythological association with the nine muses who

presided over song, poetry, and the arts and sciences, and thus education" (Boyer, 1997, unpaged). Boyer further shares, "According to the American Association of Museums (AAM), the community of museums recognizes that 'education is inherent in the public mission of museums' (The Official Museum Directory 1997, AAM, 1996)." Another quote attributed to the American Association of Museums states that the *purpose* of museums "'is to collect and preserve the evidence of the natural and physical world and of human accomplishments,'" and the *function* of museums is "'to use those collections and related ideas to contribute to human knowledge and understanding'" (Caston, 1989, p. 93).

Museums collect, preserve, and display objects so that people might learn more about themselves and the world around them and they classify objects into three different types: a work of art, a specimen, or an artifact (Caston, 1989). The January/February 1996 issue of Art to Zoo (the Smithsonian bimonthly teaching magazine now entitled Smithsonian In Your Classroom) focuses on the subject of "Teaching with the power of objects." Its introduction provides an excellent description of three types of objects:

> The objects inside a museum may be . . . made by exceptional artists such as Vincent Van Gogh. Or they may be natural specimens such as bones, beetles, or fossils. They may also be simple, ordinary things such as tools, forks and spoons, or quilts that show what everyday life was like for most people. All of these things offer unique ways to learn about life in our nation and our world (p. 4).

Objects serve as powerful learning tools when experienced by people first-hand because, as Richard Riley, former U.S. Secretary of Education, states, they "enliven our past, stimulate our enjoyment of the present,

and help introduce our future" (True Needs, True Partners, 1996, p. 7). One way objects stimulate our enjoyment in the present is by enabling people to explore natural and material wonders with their senses. No museum postcard can do justice to the visual elements of color, line, shape, and texture in Picasso's *Head* - no substitute exists for an encounter with the actual painting that Picasso "thought about and created with his own hands" ("Teaching," 1996, p. 4). Objects can also trigger an imaginative process of open-ended questioning. An encounter with an object that lasts for minutes might lead to days of thinking and years of remembering.

Collaborations which connect children to different kinds of objects for the purpose of deepening their knowledge of the world and human experience require good communication on the part of both museum educators and teachers in order to succeed. Webster's Ninth New Collegiate Dictionary defines "collaborate" in this way: "to work jointly with others or together especially in an intellectual endeavor." Collaborations might involve something as simple as a teacher calling an education department at a museum and asking the museum educator to recommend a program at the museum based on the class's curriculum needs. The teacher and museum educator might discuss which aspects of the selected program the guide should highlight during a visit in order to best serve the students. Other collaborations consist of teachers and museum educators sitting down together to develop a curriculum unit. In museum schools, where instruction regularly takes place in museum environments, teachers and museum educators work together daily to design and/or implement units. The depth of the museum-school relationship depends on the type of collaboration, which we will further discuss in the "Partnership" section of the literature review.

Partnerships

Within the literature, we have found examples of both schools and museums initiating a collaborative relationship with one another. In general, collaborators pursue one or more of **six different types of partnerships**. These partnerships include professional development, outreach, pilot programs, field trips, residencies, and the creation of museum schools.

Professional development opportunities offered by museums and cultural alliance organizations benefit teachers in many different ways. A major benefit involves an increased familiarity with museum resources. Judith Hodgson (1986), executive director of the Philadelphia Alliance for Teaching Humanities in the Schools (PATHS), believes that the "primary audience and target of museum education must be the nation's teachers" (p. 30). PATHS's initiative to train teachers in the use of museum resources involves "getting the *teachers* into the collections, without their students in tow" (p. 31). Teachers interact with museum materials and develop a collegial relationship with museum and library personnel. This organization also distributes $2.25 million in grants from the Rockefeller Foundation, the Pew Memorial Trust and a corporate group called the Greater Philadelphia First Foundation (up to $3,000 per grant) to teachers who work in partnership with other teachers or with educators and specialists at universities, museums, and libraries. The executive director hopes that such programs and collaborations will enable the *teachers* to actively interpret museum collections for their students.

The partnership between the Museum of Natural History at Wilson College in Chambersberg, Pennsylvania and a local elementary school invited teachers to do just that - interpret the museum collections for

their students. Geno Torri (1997), the museum director, specified a concern in his article that 90 percent of teachers use textbooks 95 percent of the time to teach science and they also demonstrate most experiments because they lack materials and confidence in this content area. The museum provided local teachers with supplies and specialist support in science content, thereby promoting "hands-on achievement that considers process skills, problem-solving abilities, and attitude" (p. 58). Teachers increased their confidence in engaging students with science content through participating in several in-service options including graduate courses and workshops about museums and the classroom, science resources, and using objects to stimulate creative thinking and writing. Teachers then brought their students to the museum to visit particular exhibits and they directed a lesson in the museum's educational resource facility. As a result of this partnership, "[t]he teachers indicated that both the science instructional time and the quality of their presentations were improved" (p. 59).

Professional development offers many advantages, but one can also see the advantages as difficulties. While museums provide access to their incredible resources through development opportunities, some teachers feel overwhelmed by the great range of resources and technologies: "For some this plethora of resources and the changes they brought about have produced some stress" (Judd & Judd, 1996, p. 43). To ameliorate "the inevitable anxieties aroused by change," the presence of museum educators "who have worked in the public schools themselves and, therefore, know public school personnel and classroom needs" greatly helps (p. 44). These museum educators do not push or threaten, but rather coax and coach teachers through the changes. Also, while teachers benefit greatly from development opportunities and take their learning and enthusiasms back into the classroom, this type of collaboration does not

directly involve students and sometimes **costs** inhibit students from visiting a museum site at all. Hodgson (1986) states: "museum trips are infrequent occurrences in city schools where tokens and school bus fares can often be beyond the budget of the school, and museum admission fees beyond the imagination of parents who send their children to school without breakfast (p. 30). Still, the following anecdote about the museum experiences of a fifth grade teacher reflects exactly what PATHS aims for: "'I'd passed the Historical Society of Pennsylvania many times, all my life, and always assumed it was for an elite, not me. And last summer they not only let me in, they let me actually touch the William Penn papers, and work on them'" (p. 35). According to Hodgson, *the transmission of excitement* (stimulated by an experience with a primary artifact) from teacher to student defines good teaching: "*That's* teaching; *that's* museum education" (p. 35). This process can occur at the museum or in the school classroom.

Outreach programs connect teachers and students with museum specialists and materials exclusively in the school setting. The New Mexico Museum of Natural History and Science operates a "highly developed outreach network," due in part to the great distances which separate settlements and towns (Judd et al., 1996, p. 40). The museum reaches "teachers and students statewide through teacher training workshops, rural science outreach, water ecology and natural systems ecology projects, traveling exhibits, and a traveling science demonstration, referred to as the Great Southwestern Road Show" (p. 40). Hodgson (1986) describes some of the outreach services which teachers and museum specialists developed through collaboration, such as a teacher's guide which accompanies slides of an exhibition at the Philadelphia Museum of Art (p. 31). This exhibition, "Ars Medica," displays "artistic images of disease and the medical arts through the

centuries," and incorporates aspects of art, science, and social studies (p. 31). High school teachers can prepare students for a visit or follow up a visit with these materials. Hodgson does not discuss whether the guide changed in any way as a result of teachers trying it out in their classrooms, or whether teachers found the slide show more effective as a pre-visit or post-visit activity. We assume that this varies from teacher to teacher.

Often museums will ask teachers to **pilot new programs**, developed by the museum staff. Museum educators review teacher feedback about what works, what does not work, and what the museum education department might consider changing. None of the articles we read for the literature review discuss this process of "farming out" individual programs to teachers and students for evaluation, although the whole New York City Museum School was, in essence, a huge pilot program in its inaugural year (1995).

As the outreach program "Ars Medica" indicates, museum exhibits tend to incorporate many different disciplines such as art, science and social studies. **Field trips** expose children to information in an interdisciplinary manner and the museum experience often touches "an emotional or intellectual nerve" within visitors (Viadero, 1998, p. 26). Viadero cites a finding of John H. Falk, director of the Institute of Learning Innovation in Annapolis, Maryland, that 95 percent of college and elementary school students he asked to recall a field trip to a museum years earlier "could relate exactly what they saw, what they did, and who they were with. And more than 70 percent of the details the students summoned up had to do with the content of the programs or the exhibits they saw" (p. 27). Viadero goes on to state, "Such vivid recollections, [Falk] believes, illustrate the potential educational value of such experiences: 'If you took a one-day experience out of someone's life, what

is the probability that they would remember that experience for the rest of their lives'" (p. 27).

In her essay, "A Model for Teaching in a Museum Setting," Caston (1989) promotes an integrated framework for effective field trips featuring three vital components: the *museum component* (the particular collection or exhibit), the *education component* (the audience and instructional methods), and the *subject area component* (the current curriculum; the needs and interests of the audience). This framework also works for museum school instruction. When schools and museum collaborate, each institution must contribute its strengths to the program.

As part of the *museum component,* Caston (1989) believes that students should learn about the actual purpose and functions of a museum during their visit in order to heighten student awareness of the people and decisions behind what they learn at a museum. This focus lays the foundation for the *Museum-in-Progress* program, a kind of **residency** in public schools originated by Peg Koetsch (1994): "MIP helps students to conduct research, organize information, decide the direction of their learning, reflect upon and evaluate their progress, and construct environments through which they can share their learning with the community" ("Museum-In-Progress," p. 15). Principals and teachers alike contact her because they seek a creative outlet for their students' learning or because teachers in the same school see the museums of other grade levels and want their students to experience this process, too. The learning that students display in MIP comes from the conceptual units they work on during the school year.

In the process of creating an exhibition, Koetsch (1994) schedules a visit to a museum exhibit which often relates directly to school's curriculum: for example, students studying Greece went to the National Gallery of Art to look at the sculptures in the exhibit entitled *Greek*

Miracles and visited the Lincoln Memorial and the Supreme Court House to photograph elements of Greek sculpture ("Museum-In-Progress," p. 17). While at the museum, students look at specific organizational and design aspects of the display. After the trip to the museum, students prepare for their own exhibition by brainstorming ideas with Koetsch based on four questions: 1) What museums have you visited? (e.g., types of museums), 2) What did you do during your museum visit (e.g., types of activities such as reading or touching), 3) What information have you learned from your research? (e.g., observations, facts, and discoveries), and 4) How can we combine what we know about activities and learning in museums to build an exhibition? (e.g., "Students were encouraged to combine the *content* of their learning with *forms* of their learning to create the exhibition's message and learning experiences") ("Museum-In-Progress, p. 15-16).

The process of creating an exhibition allows students to develop important academic and social skills. MIP augments the level of student understanding about the museum theme and enables teachers to evaluate the learning of their students through performance assessment. Observing and participating in the project also offers professional development for teachers who might hope to carry on this project independently.

What is it like to learn in a museum three days a week? The New York City Museum School, the most sizable collaboration we read about in terms of museum educator-teacher interaction and student involvement, also incorporates all three components of Caston's model. The school, which opened its doors to 85 sixth and seventh-graders in 1994,

> is a collaborative effort between the city public school system and the New York museum community. Four museums - the Brooklyn Museum, the Jewish Museum, the American Museum of Natural History, and the Children's Museum of Manhattan - host the students three days a week.

> The kids spend the remaining two days in a classroom at their 'home base,' a public school facility in Chelsea called the O. Henry Building (O'Donnell, 1995, p. 39).

Licensed teachers work with museum educators to create "'modules,'" each focusing on a particular theme (e.g. American history), which integrate the exhibit resources into "all five major curriculum subjects: social studies, humanities, science, language arts, and math" (p. 39). When the students work on-site, objects constitute the basis of their lessons. Students closely observe "a painting, a fossil, a sarcophagus, a gem, a vase" or even a 17th century Brooklyn home (p. 39). Administrators and other faculty hope that this alternative style of learning will stimulate students' motivation. The Museum School Co-Director, Sonnet Takahisa, says, "'Middle school is an age where kids are ripe for being turned off of education'" (p. 39).

Such an intense collaboration, in which "teachers must develop lesson plans in partnership with their colleagues at the museums" has its benefits and drawbacks (O'Donnell, 1995, p. 40). The primary benefit of the Museum School involves access to incredible artifacts of material culture and "the excitement of learning through first-hand observation, analysis, and discovery" (p. 39). Other benefits include the provision of a "vital sense of movement often absent from the typical middle school classroom," and the opportunity to create projects as a mode of expression for the understandings they have built "through a continual and circular process of 'observing, reflecting, connecting, [and] reformulating'" (p. 66). In order for this type of learning to succeed, educators from both worlds must learn to think like the other and work to acquire new skills; for example, teachers must learn about the collections and museum educators must learn about evaluating the students' learning.

Drawbacks to the Museum School approach include coordinating museum and school activities (the students meet at the O. Henry building every morning and take the subway to various sites), the necessary lack of *one place* to keep instructional materials, limited classroom space in the museums and various distractions, and the challenge of maintaining discipline in a non-school setting. O'Donnell states, "Bringing youngsters outside a traditional educational setting on a regular basis requires teaching a whole other set of manners. Kids must remember not only what constitutes appropriate behavior in a classroom, but how to conduct themselves in a museum" (p. 64).

Curricula

Partnerships between museums and schools often result in the development of new curriculum or the development of new ways for students to learn or share their understandings of the curriculum. The literature for the Virginia Discovery Museum succinctly describes the positive outcomes of collaboration: "The Museum believes in the value and benefits of collaboration. Community partners provide a variety of perspectives, additional areas of expertise, and much needed assistance" (Virginia Discovery Museum brochure, "Future Plans," 1998).

Two articles provide specific evidence of teachers and museum educators sitting down together to create new lessons and units. The article, "Tradition and Technology" relates how New Mexico Museum of Natural History and Science staff members "worked with fifth-grade science teacher Cheryl Haynes to develop an interdisciplinary water curriculum for the fifth grade. This curriculum focuses on concerns of vital importance to the arid Southwest" (Judd et al., 1996, p. 41). Educators also produced a student activity package, "Arid Lands, Sacred Waters," in conjunction with this curriculum. Printed in both English and Spanish, "[o]ver 3,000 copies have been distributed to schools and

organizations" (p. 41). In another example of joint planning, Torri (1997), the director of the Museum of Natural History at Wilson College, states, "The classroom teacher and I reviewed the curriculum topics and the museum resources and developed activities that would support the curriculum" (p. 59). The above partnerships, which incorporate professional development, outreach, and field trips, resulted in a more engaging curriculum.

Field trips give museum educators a chance to add their particular perspectives and expertise to the themes children study in school, but Caston (1989) warns against such a rigid adherence to school curriculum that "museums become mere extensions of the formal classroom, thus sacrificing their own identity" (p. 105). The actual site of the museum provides an important context that differs from the formal classroom: "'What is important about places like zoos and aquaria and natural history museums is that they are appropriate contexts for those topics,' [Falk] says, 'Merely placing children in those contexts increases the probability that they are learning" (Viadero, 1998, p. 28). Monticello is an extremely appropriate context for curriculum about Virginia history, for example. Overall, the museum educator strives to meet "the challenge of making the museum visit relevant to school children, but, at the same time, using the museum's unique capabilities to broaden the students' horizons" (Caston, p. 106).

In Museum-In-Progress, a program which enhances the relevance of the school curriculum by making it more personal for schoolchildren, Koetsch (1994) guides children towards the goal of creatively expressing themselves in the school environment. In past MIP projects, students chose to share information through **role plays** and **dramatization** (e.g., a rain forest protest march featuring the voices of lumber companies and lumberjacks, farmers, environmentalists, scientists and concerned

citizens), **artwork** (e.g., life-size models of terra cotta warriors), **video** (e.g., a tape of students performing an ancient Greek play, with costumes, masks, and photographic collages on display), and **simulations** (e.g., students created a dig setting and taught visitors how archaeologists unearth artifacts) ("Museum-In-Progress").

In the New York City Museum School, teachers and museum educators strive to incorporate the "curatorial process" into the students' learning of the curriculum, reflective of Gardner's ideas about a museum "apprenticeship": "Curators look carefully at an object, study it by tapping knowledge accumulated from years of study and experience, confer with other specialists, and ultimately present new information and theories in an exhibit, scholarly publication, or symposium" (O'Donnell, 1995, p. 39). Likewise, administrators and teachers want students to develop their powers of observation, make personal connections between the object and their own prior experience, discuss the object with their peers, and share their learning in a cumulative presentation. This style of learning encourages students "to work toward finding their own answers to questions and problems" (p. 40).

Bringing two worlds of learning together and making this strategy work on a daily basis constitutes a great challenge, says the co-director of the Museum School. Teachers must make sure that, in the midst of this alternative style of learning, students gain proficiency in the basic academic skills of the curriculum. More "traditional" academic work occurs on the two days that students spend at the O. Henry Building. Students read selections in textbooks, develop math skills, participate in science experiments, and take gym and Spanish classes.

Student Understanding

The articles list many positive outcomes of museum-school partnerships with regards to student understanding. As a result of an

enriched curriculum that incorporates objects, real-world experiences, and multiple learning styles, students demonstrate a higher interest in and enjoyment of subject matter, test scores improve, leadership abilities increase, and the partnerships often strengthen the home-school relationship.

Objects play a key role in the increased understandings of students. Caston (1989) states, "When museum visits are used to expand the school curriculum, students are given the opportunity to learn in a direct way - through objects" (p. 105). Also, "[o]ften the exploration of authentic objects makes the classroom book learning more meaningful" (p. 105). As Caston reveals in her essay, **objects**, presented in an interdisciplinary manner and connected to human experiences, "invite the viewer to explore, participate in, and gain a deeper understanding of human experience" (p. 90). Indeed, the "more an object involves our senses and perceptions, the more deeply we understand it" ("Teaching," 1996, p. 4). It basically comes down to this: museums place REAL objects into REAL contexts and this "immediacy" excites the students.

Student comments about the learning that occurs in museum-school partnerships reflect this enjoyment of "the real." One student who participated in the MIP program concludes, "'It's a fun way to learn about history without studying in class and looking at books, or reading all day. Instead of building in your mind, we build for real'" (Koetsch, "Student curators," 1994, p. 57). A sixth-grader who attended the Museum School likes the "alternative" style of learning because "'you don't just sit in a classroom. You get to walk around . . . and actually learn. More first-hand experience is better than a lecture'" (O'Donnell, 1995, p. 68).

School collaborations with museums often invite the participation of parents or the whole family in the learning experience. On the most obvious level, many parents like to accompany their child's class on field

trips. Sometimes student learning in museums motivates children to bring parents, who did not initially accompany them, back to the exhibit. A sixth-grader at the Museum School reported that she enjoys accompanying her parents to museums and showing them various objects she has learned about "in school" (O'Donnell, 1995, p. 68). Family museum events create a fun, festive atmosphere. The New Mexico Museum of Natural History and Science annually hosts a "neighborhood night," inaugurated in 1992: "The museum offered free admission, food, activities for families and children, and corporate-sponsored door prizes. Many families who would not otherwise have been able to afford the museum's family admission charges came and participated enthusiastically" (Judd et al., 1996, p. 41). Museum-in-Progress culminates in an opening night which many parents, families, and members of the community attend (free of charge!). Students serve as the tour guides and learn, for example, "the fine art of encouraging visitors to make meaningful connections with a foreign culture and its artifacts" ("Museum-In-Progress," 1994, p. 17). Using methods of inquiry learning, students might pair a question about the familiar ("'How many of you have ever worn a hat?'") with a question about the unfamiliar ("'Have you worn a hat like this?'") to involve visitors in relating their own background knowledge to new objects ("Museum-In-Progress," p. 17).

Serving as tour guides develops important leadership abilities in the students, especially the qualities of confidence and assertiveness. Other partnerships have also resulted in increased leadership abilities in the students. Michael Saavedra, principal of the Reginald F. Chavez Elementary Magnet School (RFC) which collaborates with the New Mexico Museum of Natural History and Science, "points out that more RFC students are undertaking leadership roles as they go on to middle school. They are participating in peer tutoring programs and have begun to dominate

awards competitions" (Judd et al., 1996, p. 43). The principal of RFC has also seen an increase in standardized test scores. Koetsch, of MIP, reports, "Teachers have noticed a dramatic increase in the students' expectations of what they can achieve and the quality of their work. MIP provides students with critical thinking skills that can be applied to any subject" ("Museum-In-Progress," 1994, p. 18).

Overall, these partnerships help students to see museums in a different light: a sixth-grader at the Museum School says, "'When I used to go to museums, I'd walk around, and I'd be, like, 'well nice.' But now, when we go with our teacher, she makes us look deeper into things'" (O'Donnell, 1995, p. 68). They also help teachers to see their students in a new light. As Gardner discusses in The Unschooled Mind (1991), a teacher who observed an academically-struggling student take apart and put back together "a food grinder and a doorknob" with his hands was amazed at his skills; this student subsequently improved in school "possibly because he had seen that there were areas in which he could excel and that he possessed abilities that were esteemed by older people" (p. 209). Also, a teacher who observed that an academically-inclined student only performed well "in situations where there is a correct answer and where a person in authority had somehow indicated to him what that answer is" encouraged the student "to take risks, to try things out in new ways, [and] to acknowledge that there are not always correct answers" (p. 209). The teacher's encouragement reflects the open-ended experience of children interacting with objects in museums. The literature communicates that people invest a large amount of energy in collaborations and, realistically, the development of student understandings takes time and guidance. The literature also indicates that, if teachers and museum educators embark upon a collaboration, be it a field trip, curriculum units, museums **in** the

schools or museum schools, these collaborations will positively impact student motivation and understanding.

Method

Participants and Setting

For this study, we spoke with six museum educators at four museum sites. We also spoke with a seventh museum educator who is not directly affiliated with a specific museum, but collaborates with schools and students to develop museums within school settings. In addition, we spoke with four classroom teachers from two elementary schools.

The selection of museum educators was based on the museum/ program with which they worked. The museums were selected based on the general subject matter that they addressed. In order to limit the scope of the study, we chose museums that dealt with topics relating to the humanities and not the natural sciences. Among the museums/ programs in the Charlottesville area that pertained to the humanities, we chose four distinct varieties of museums: an interpretive, historical village, an art museum, a historical home, and a children's museum.

At the Museum of American Frontier Culture in Staunton, Virginia, visitors walk through farms that exhibit the daily life of four different historical cultures (German, Irish, English, and Colonial American), including the people, animals, and tools of the time. The staff of the museum are called "interpreters" due to their adoptions of the historical farming lifestyle and clothing while working at the museum. We interviewed Lydia Volskis, education director at the Museum of American Frontier Culture, for this study.

The Bayly Art Museum, located in Charlottesville, Virginia, houses permanent collections of art, as well as many rotating exhibits on subjects that range from West African masks to the prints of Pieter

Bruegel. We interviewed Jane Ann Young, the education director at this site.

We also included Thomas Jefferson's historical home of Monticello, located in Charlottesville, Virginia, in our study. Visitors to Monticello or their Visitor's Center can learn, not only about one of America's most famous presidents, but also about life and politics in Virginia during the later part of the 18th century. At Monticello, we spoke with the education director, Robin Gabriel.

We also pursued the Virginia Discovery Museum, located in Charlottesville, Virginia. The Discovery Museum contains a combination of permanent and rotating hands-on exhibits for children of all ages. Popular exhibits include a log cabin house, a dress-up corner, a crafts room, and many active learning stations that relate to a child's life in Japan. We had the pleasure of speaking with three educators at the Virginia Discovery Museum; Peppy Linden, the executive director, Peter D. Clark, the gallery manager, and Fenella Belle, the exhibits and outreach coordinator.

In addition, we contacted a museum specialist who works with school populations in Northern Virginia. Peg Koetsch, the founder and director of the business Education Matters, facilitates Museum-In-Progress programs, where students design and carry out museums in their school setting.

The classroom teachers whom we interviewed included Carolyn Adams, a kindergarten teacher at Johnson Elementary School, in Charlottesville, Virginia. Ms. Adams has visited the Virginia Discovery Museum with her students many times. We also spoke with three teachers from Bailey's Elementary School in Falls Church, Virginia who have participated in the Museum-In-Progress program: Allyn Kurin, a fourth grade teacher, Mary Lou Henderson, a fifth grade teacher, and Leanne Helsing, fourth grade teacher.

The participants received no compensations or reward for their participation in the study. They participated in the interviews, we assume, because of a desire to share their experiences and to further enhance collaborations between museum educators and classroom teachers.

Design

First, we collected and read relevant literature and established the purpose of our study. Next, we telephoned the education departments of four museums in the Charlottesville, Virginia area, and the director of Museum-In-Progress, in Springfield, Virginia. In preparation for the interviews, we created a list of interview questions which dealt with the topics of museum/school collaborations, curriculum, and student understanding (Appendix A). Next, we conducted the interviews in person. We tape-recorded the interviewees responses, and later, transcribed the data. We then compared and contrasted the museum educators' responses to the identical interview questions and looked for patterns in their comments.

During the interviews with the museum educators we asked their permission to contact teachers who have frequently visited their museum sites with school groups, or have collaborated with the museum educators in other ways. All museums granted us permission and provided us with a short list of teachers to contact. From their recommendations, we successfully contacted four teachers. We interviewed the teachers using a set of questions similar to those used with the museum educators (Appendix B). Like our interviews with the museum educators, the teacher interviews were also tape-recorded, transcribed, and analyzed. The themes that we found, based on both the museum educator and teacher interviews, form the results of our study.

Results

Five major topics regarding museum and school collaborations provide a general framework for the results of this study. They are: persons who collaborate and their roles, reasons for collaborations, types of collaborations, collaborations and the school curriculum, and collaborations and student understanding.

Persons Who Collaborate and Their Roles

The primary persons who work together in the collaborations are museum educators and classroom teachers. Educators at all five of the museum sites felt that their role was to serve as a bridge between schools and museums.

The museum educators highlighted three primary connections for which they feel responsible. First, educators wish to connect the museum and the school population. All museum programs that we visited had brochures available to mail to teachers, tours designed for groups, and outreach programs.

Second, museum educators feel responsible for merging students' understanding of physical objects with abstract concepts. When visiting Monticello and studying social class, for example, students learn about the sunglasses that Jefferson kept in his pocket and how they were a symbol of wealth and importance during the early nineteenth century (R. Gabriel, personal communication, March 1, 1999).

Third, museum educators hope to connect real-world experiences, that their museums provide, with information that students study in school. When learning about animal adaptations in outdoor habitats, for example, Robin Gabriel, education director of Monticello, remarked, "The National Zoo or the Encyclopedia?" (personal communication, March 1, 1999).

The other members of the collaboration are school teachers. Museum educators believe that the teachers have several responsibilities in the collaborative effort of the museum experience. First, all museum educators that we interviewed believe that it is the teacher's responsibility to communicate his/her applicable curriculum objectives with the museum educators so that those at the museum site can best serve the students' needs. Lydia Volskis, education director at the Museum of American Frontier Culture commented, "We often put a special note on the day's tour schedule to alert the interpreters to what the teachers are studying and have asked us to focus on" (personal communication, March 5, 1999).

Also, we found that it is important that teachers prepare their students for a museum visit by doing pre-visit activities in the classroom. The Virginia Discovery Museum has felt frustrated with teachers lack of pre-visit preparation (P.D. Clark, personal communication, February 26, 1999). Lydia Volskis, of the Museum of American Frontier Culture, expressed a similar sentiment: "If the kids are clueless and the teachers don't know either, it will detract from what we are doing here. In a two-hour tour we can not make up all the ground that they should have covered before-hand and explain our part, also" (personal communication, March 5, 1999).

The teacher is also responsible for following up on the students learning that took place at the museum. Robin Gabriel expressed, with regret, that museum educators are not always capable of doing a through post-visit evaluation with students. She stated, "The one big problem with museum education is....(that) you get the kids for a really short time... maybe it's an hour time, maybe it's five...and you never see follow-up. When you're a classroom teacher, you're there for the little subtleties, 'Did what I say sink in?' " (personal communication, March 1, 1999).

Reasons For Collaborations

Based on our interviews, five primary reasons emerged regarding the benefits of museum and school collaborations. Four reflect the contributions of the museums and museum educators and one reflects the positive outcomes of working with classroom teachers.

First, museums are a critical resource to schools because they possess real objects that can turn stories of history into reality or turn the spoken word into a multi-sensory experience. At the Museum of Frontier Culture, for example, children can learn how earlier settlers tended to their crops by actually helping in the fields, rather than just seeing a picture of a farm in a book (L. Volskis, personal communication, March 5, 1999).

Seven out of seven museum educators say that a unique aspect of museum education involves the objects. Robin Gabriel, of Monticello, described the various aspects of looking at an object and the skills that students develop while doing so. She discussed that, when looking at objects, students should consider three questions. The question of "What is it?" prompts children to think about the culture, person, or place that the object represents. Also, students should consider the object's use by looking at its parts. In addition, students should consider what the object tells them about any related cultures, persons, places, or related concepts (personal communication, March 1, 1999).

Second, students build academic and creative skills through object investigations including observation, problem solving (figuring out what the object is), critical thinking (connecting the object to a larger concept), and communication (as students discuss their thoughts (L. Helsing, personal communication, March 18, 1999).

Third, all of the museum educators discussed the benefits of using museum collaborations to "tap children's multiple learning styles"

(P. Linden, personal communication, February 26, 1999). Jane Ann Young, education director at the Bayly Museum of Art, explained how she addresses children's various learning styles by taping their multiple intelligences. "We try to hit topics and art from every possible area. We might act out a picture, draw it, and ask questions about the style of the art, or the culture that is shown" (personal communication, March 9, 1999).

Fourth, the museum educators from Monticello and the Bayly Art Museum discussed how they like to use inquiry methods of instruction when working with students. Robin Gabriel explained, "With inquiry learning, you're asking a lot of questions of students, but you're also directing those questions as you go" (personal communication, March 1, 1999).

Fifth, the collaboration is successful when the teachers know their students. The information that they bring to the collaboration can assist the museum educators in creating appropriate programs. Two museums educators also mentioned that the teachers can also learn about their students once they reach the museum settings. Peter D. Clark of the Virginia Discovery Museum clarified his remarks with a story: "Teachers would bring their groups and then take me aside and say 'Watch out for Johnny. He's a troublemaker.' Well, Johnny would be the star attraction. He'd be out there exploring and turning over rocks and having a wonderful experience. It is great for the teacher to see the child doing that" (personal communication, February 26, 1999).

Along with the benefits, the museum educators and teachers also encounter obstacles during their collaborations. Both groups discussed that many teachers feel rushed through their yearly curriculum and accountable for the Virginia Standards of Learning. Teachers do not have time to take their students on as many museum visits as they did in the

past. Lydia Volskis of the Museum of American Frontier Culture mentioned that when teachers are able to visit the museums, they often do not feel that they have time to complete the pre- and post-visit activities (personal communication, March 5, 1999).

An additional obstacle was felt by the teachers who were involved in the Museum-In-Progress program. They would have liked to give their students more responsibility for the completion of the museum, but time, again, was limiting. Leanne Helsing elaborated on the topic, "It is really hard to pull it all together. I really felt guilty in a way for staying after school for hours the night before....but you have only so many hours in a day. It's a lot of energy" (personal communication, March 18, 1999).

Types of Collaborations

There are six types of collaborations that can result from museums and schools working together to further their students' education, arranged here in order from least direct student involvement and to most direct student involvement.

The first are professional development opportunities where museum educators train teachers in the content and hands-on methods that relate to their site's focus, such as frontier history or art education. Four out of five museums included summer teacher institutes or professional development seminars in their educational programming. The Bayly Art Museum's education department, for example, is looking forward to presenting several art-related workshops to Albemarle County, Virginia teachers this summer. Jane Ann Young, the Bayly education director, explained that the success of her programs were based on whether or not teachers are given professional credit or monetary compensation for attending the workshops (personal communication, March 9, 1999).

The second form of museum-school collaborations were pilot programs. Robin Gabriel of Monticello (personal communication, March 1,

1999), and Lydia Volskis of the Museum of American Frontier Culture (personal communication, March 5, 1999), believe that their pilot programs serve multiple purposes. The pilot programs allow museums to try new tours, activities, and materials with small and select groups of students to decide what, if any, changes need to be made before the programs are made available to the museum's entire school population. Also, the pilot programs allow museums to maintain positive connections with classroom educators by offering them free or reduced cost pilot programs to use with their students.

All five museums/organizations that we contacted for our study sponsored outreach programs that did not take place at the museum site, but took place at schools. These programs often involved representatives from the museum traveling to schools to share materials. In other cases, only the materials were sent to the classroom. An example of the latter comes from the Virginia Discovery Museum. The Museum has prepared a program titled "Buried History" in which a trunk that includes recent archeological discoveries from the Charlottesville area are sent to the school for the children to investigate and from which they can draw conclusions about the history of the area (brochure, Virginia Discovery Museum, 1999). Caroline Dobranski, of the Monticello Education Department, commented, however, that outreach materials are sometimes returned broken, or not returned at all, and it is important for teachers to make a conscientious effort to keep careful track of all parts of an outreach program (personal communication, April 2, 1999).

Field trips were the most common type of collaboration among the museums/organizations that we studied. All sites offered tours for school groups designed by museum education staffers. The teachers' brochures for Monticello, for example, listed programs such as "Thomas Jefferson's Family Life," "Monticello: A Working Plantation," and "Digging Up the Past"

(an archaeology activity). All site representatives also expressed their eagerness to work with teachers to modify existing programs to meet specific curricular needs.

The fifth type of collaboration involves the residency of a museum specialist in the public schools. The residency differs from other types of collaborations because it is based at a school, rather than a museum, and involve student development of the museums, versus student participation in preplanned activities, designed by others. Peg Koetsch's program, Museum-In-Progress, is a long-term, interdisciplinary project where "students design, install and interpret artifacts (which they have constructed or borrowed) for an exhibition in their school, based upon a concept in the curriculum" (personal communication, February 21, 1999).

Collaborations and the School Curriculum

All of the museum programs that we studied fit their tours/activities into pertinent objectives of the Virginia Standards of Learning (SOLs). Lydia Volskis of the Museum of American Frontier Culture explained the need for museums to merge the SOLs into their programming: "A lot of teachers need to be able to rationalize or have a reason for going on a field trip, so we make sure that all of our programs...touch on and cover SOLs on many grade levels" (personal communication, March 5, 1999). All five brochures also listed applicable SOLs for each museum program. None of the museum programs, however, base their tour topics exclusively on the SOLs, but the Virginia Discovery Museum has had requests to do so (F. Belle, personal communication, February 26, 1999).

Museum educators are currently not focused on using technology in their programming, in contrast to the heavy emphasis that is channeled to using technology in the schools. All five of the museum sites/organizations have Web sites and e-mail, but only two, Monticello and the Virginia Discovery Museum (on an intermittent basis), have

programs over the Internet in which students can participate.

Collaborations and Student Understanding

Based on our discussions with multiple museum educators and teachers, collaborations increase students' motivation and achievement while developing their critical thinking skills and self-esteem.

Peppy Linden has seen many children at the Virginia Discovery Museum "get excited about learning... and get excited to learn more" (personal communication, February 26, 1999). Due to the diverse opportunities that many partnerships offer students, all learners can, hopefully, find an activity that excites and motivates them. An example comes from a teacher's telling of a recent MIP activity: "We had been studying how it was in Colonial life and the kids made applesauce to sell in the museum shop because it incorporated economics. And three of my kids who never do homework or anything were the ones who came and stayed for the whole thing serving applesauce. They were really into it and took their job really seriously" (L. Helsing, personal communication, March 18, 1999).

Student skill development is also a product of museum-school partnerships. Jane Ann Young works with student visitors to the Bayly Art Museum to "develop thinking skills, to connect, [and] to take what they see and associate it with what they know from the past and then come up with something new" (personal communication, March 9, 1999). Teachers involved in the MIP program stress that students develop communication skills. "Because there are such varied audiences [that visit the MIP museums]," Allyn Kurin explained, "like older kids coming through, adults, educators, or younger kids, [the MIP students] learn to speak in different ways for their given audience" (personal communication, March 18, 1999).

MIP teachers are able to follow their students' growth after the museum activity concludes, unlike many museum educators. The teachers

have observed that students' self-esteem and achievement increase both during and after the collaborations (L. Helsing, personal communication, March 18, 1999). As one MIP student noted about changes in herself, "Doing a museum taught me not to be so shy" (A. Kurin, personal communication, March 18, 1999).

In all of the partnerships that we studied, both the museum educators and teachers work to enhance the education of school-aged children through field trips, as well as various other student and teacher oriented activities.

Discussion

After synthesizing the data that we collected through both our literature review and interviews, many themes emerged regarding museum-school partnerships. For example, after reading about Gardner's theories that incorporate practical skills, multiple intelligences, and objects into learning, we saw and heard about the theories in action at all of the museums we visited.

In contrast, some of the results that we expected to find did not appear anywhere in our research. We projected that museum educators and teachers would often work in close collaboration to design personalized programs and field trips to fit specific classroom needs. While many museum educators conveyed a willingness to participate in such collaborations, but both museum educators and teachers stated that the personalized activities are not common because they take more time and energy than either party can usually devote to the projects. Also, teachers can usually find a program that fits their curriculum needs from a museum's set offerings.

We did not expect that specific educational programs available at one of the museums we visited would be used so infrequently by teachers. The museum educators from this site felt frustrated at the lack of

teacher collaborations in which they were involved, while all of the other museum educators we interviewed felt satisfied with their partnerships. We hypothesize that this particular museum's frustrations may be due to the population that they most frequently serve: preschoolers. The teachers of these young students may not find it necessary to plan for particular programs when visiting the museum because they are not bound by the curricular constraints of the Virginia Standards of Learning.

We expected that both museum educators and teachers would mention the students/schools costs of museum programs among the obstacles they encounter when collaborating. None did, however. In contrast, Jane Ann Young, of the Bayly Art Museum, told us of yearly monetary allotments that are given to the admission-free museum from the surrounding city and county school budgets. The school systems provide these funds in an effort to support the museum's activities for their students and to encourage teacher/museum interactions (personal communication, March 9, 1999).

When costs do become an obstacle to museum-school activities, however, grants and community and corporate sponsorships can be solicited to support the projects. Grant sponsors include organizations such as The Washington Post, the National Education Association, and the Virginia Education Association, among many others. Community and corporate partners can be established through non-profit organizations such as the National Association for Partners in Education (NAPE), which works to connect local resources with schools.

During the interviews for the study, we found evidence that incentives may be needed in order to get teachers involved in museum-school partnerships. Jane Ann Young, of the Bayly Art Museum, noted that she is planning on doing professional development workshops for local teachers, but, if the schools do not give teachers monetary compensation

or professional development credits, she believes that the participation rate will be very low (personal communication, March 9, 1999).

Recommendations for Future Research

The field of museum-school partnerships should be researched further in order to better understand how the two types of institutions can continue to work together to enrich children's learning experiences. We have five recommendations for further study: 1) Larger numbers of teachers could be interviewed regarding their participation in museum-school collaborations, their goals for related curriculum development, and their methods of assessing student understanding; 2) Students could be observed and interviewed regarding how they feel about their museum experiences, their favorite and least favorite activities, and suggestions that they have for the programs; 3) A case study that follows a museum-school collaboration from the initial contact and planning stages, through the implementation and assessment could provide a detailed account of partnerships' successes and difficulties; 4) Investigations could be made into how technology could be better used to expand the education programs of small/medium sized museums; and 5) Larger, more urban museums, and/or those that focus on the natural sciences could be researched in a manner similar to the study we conducted.

As we explored the topic of partnerships, museum educators and classroom teachers provided us with many generous opportunities to look behind-the-scenes into their respective world of education. We learned of their backgrounds, teaching styles, past and future collaborations, and most importantly, *how* these museum-school ties have and will continue to motivate students to think and see critically. As future teachers, we plan to tap community resources in order to enhance the education of our students, and we hope that fellow educators will also embrace the unique and beneficial opportunities provided by museum-school partnerships.

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Appendix A

Interview Questions For Museum Educators

Name:
Position:
Years in Position:
When was your position created?

Background Information

1. Why did you decide to enter the field of museum education?

2. What experiences have prepared you for your position?

3. How would you define your role as a museum educator?

4. What is one way that the world of museum education differs from education in school classrooms?

Partnerships

5. What experiences do you have collaborating with classroom teachers?
**schools/teachers, grades, content, programs, lesson plans?

6. Who usually initiates the collaboration?

7. How would you describe your relationship with local schools and classroom teachers? (How far-reaching (geographically) is the scope of your education program?)

8. Do you develop curriculum and lessons jointly with teachers?

9. What types of curriculum needs to teachers approach you with most often?

10. Are you familiar with the Virginia Standards of Learning?

11. Do you take into consideration the Virginia Standards of Learning in your museum programming? If yes, please provide an example.

12. How do you involve technology in your museum programming?

Student Understanding

13. What kinds of objectives do you think are appropriate for students in a museum setting?

14. How do you evaluate the children's learning in relation to the objectives?

15. How do you accommodate for different learning styles when working with children?

16. What are some of the most interesting and stimulating objects you have introduced to children?

17. Why do you feel that these objects are especially interesting to children?

Miscellaneous

18. What costs do the programs entail?

19. Who covers the costs and how?

20. What difficulties and obstacles have you encountered through working in partnership with schools?

21. What are your future goals as a museum educator?

22. May we contact teachers with whom you have worked to talk about their museum education experiences?

Appendix B

Interview Questions For Teachers

Name:
School:
Grade Level:
Years teaching:
Years involved in museum collaboration:

Background Information

1. How would you define your role as a teacher?

2. Describe what you feel is the best learning environment for children.

3. What is one way that the world of museum education differs from education in school classrooms?

Partnerships

4. What experiences do you have collaborating with museum educators?
**museums, names of educators, programs, lesson plans

5. Who usually initiates the collaboration?

6. How would you describe your relationship with museum educators?

7. What role does the school administration play in fostering/continuing the partnerships?

8. How do parents respond to the museum education programs?

Curriculum

9. Why did you decide to incorporate museum experiences into your curriculum?

10. Do you develop curriculum and lessons jointly with museum educators?

11. What types of resources do you hope museum educators can provide to meet curriculum needs?

12. How do the collaborative experiences fit into the curriculum for your grade level?

13. How much time do you allow during your school year for museum-based activities?

14. How do you prepare your students for museum visits?

15. How do you conduct activities in the museum setting?

16. How do you follow-up a museum visit in the classroom?

17. How do you involve technology in your museum-based activities?

18. Have you and your students made classroom collections? Please describe.

Student Understanding

19. What kinds of objectives do you think are appropriate for students in a museum setting? (Perhaps describe some specific skills you hope the children will develop.)

20. How do you evaluate the children's learning in relation to the objectives?

21. What changes have you noticed in student motivation since you began the museum activities?

22. What changes have you noticed in student achievement since you began the museum activities?

23. How do you accommodate for different learning styles when working with children in non-school settings?

Miscellaneous

24. What costs do the programs entail?

25. Who covers the costs and how?

26. What difficulties and obstacles have you encountered through working in partnerships with museum educators?

27. How has collaboration with museum educators effected your teaching?

28. Do you think your students are seeking museum experiences on their own due to their exposure to museums during school?

Collaborate!
Recommendations to get you started:

* **Call museum education departments:**

  * Inquire about field trip brochures, lesson plan offerings, outreach programs, and collections that can be lent to schools.

  * Inquire as to whether or not museums can adapt offerings to meet specific curriculum needs.

  * Ask if the museum education department offers professional development opportunities (workshops and/or summer institutes).

  * Create a file for the museum information that you have collected.

* **Relate classroom activities to museum visits:**

  * If museum provides pre and post visit activities, complete these with your students.

  * Make use of inquiry learning and incorporate multiple learning styles in the classroom and during the museum visit.

  * Integrate objects into classroom lessons and activities.
    * Ex: When introducing an artist to students, bring in an object meaningful to the artist, such as a tool (Alexander Calder - pliers) or a subject (Georgia O'Keefe - flowers).
      -- Smithsonian Early Enrichment Center, Washington, D.C.

  * Visit museums with an eye for exhibit design.
    * How do you learn information from an exhibit? How does it capture your interest?
    * For example, consider what information the labels include, how objects are displayed, and what audio-visual equipment accompanies the exhibit. -- Peg Koetsch, Education Matters, Springfield, VA

  * Think about making collections in your classroom. A helpful resource:

    Monhardt, R. M., & Monhardt, L. (1997). Kids as curators. Science and Children, 35 (1), 28-32, 80.
    - -Discusses several aspects of creating a classroom museum: How to generate ideas, museum roles students can assume, and methods of evaluation.

  * Keep an eye out for newspaper and magazine articles about museum and school collaborations. They can be a good source for ideas!

Various Museum Resources in the Charlottesville Area:

Virginia Discovery Museum
P.O.Box 1128
Charlottesville, VA 22902
(804) 977-1025
www.vadm.org
Exhibits and Outreach Coordinator:
Fenella Belle

Monticello Education Department
P.O.Box 316
Charlottesville, VA 22902
(804) 295-3588
www.monticello.org
Education Director:
Robin Gabriel

Museum of American Frontier Culture,
Education Department
P.O.Box 810
Staunton, VA 24402-0810
(540) 332-7850
www.frontiermuseum.org
Education Director:
Lydia Volskis

Bayly Art Museum,
Education Department
Rugby Road
Charlottesville, VA 22901
(804) 924-3592
www.virginia.edu/~bayly
Education Director:
Jane Ann Young

Additional Teacher Resources:

Smithsonian Office of Education
Arts and Industries Building
Room 1163, MRC 402
Washington, DC 20560

Education Matters (Museum-In-Progress)
6709 Caneel Court
Springfield, VA 22152
(703) 569-9378
www.fcps.k12.va.us/BaileysES/museum.htm
Director: Peg Koetsch

Ask for: Smithsonian in the Classroom - Publication containing teaching ideas for grades 4 -9. Published four times a year, free subscription.

Museums & Learning: A Guide for Family Visits by Wilma Prudhum Greene. A booklet with general guidelines for pre-visit, on-site, and post-visit activities, as well as extensive electronic and print resources. *Highly recommended.

Also, http://educate.si.edu - Lesson plans from the Smithsonian Institution's many museums and research offices.

www.si.edu/organiza/centers/seec - Smithsonian Early Enrichment Center. Information about the professional development workshop, "Learning Through Objects" (for early childhood educators and museum educators).

Also useful:

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